

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

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|----------------------------------|---|-------------------------------|
| GLOBALFOUNDRIES U.S. INC. |) | |
| Plaintiff, |) | Case No. 6:19-cv-00493 |
| v. |) | JURY TRIAL DEMANDED |
| TAIWAN SEMICONDUCTOR |) | |
| MANUFACTURING COMPANY LTD., |) | |
| TSMC NORTH AMERICA, TSMC |) | |
| TECHNOLOGY, INC., QUALCOMM INC., |) | |
| QUALCOMM TECHNOLOGIES, INC., |) | |
| GUANGDONG OUJIA HOLDING CO., |) | |
| LTD., GUANGDONG OUJIA |) | |
| COMMUNICATION TECHNOLOGY CO., |) | |
| LTD., ONEPLUS MOBILE |) | |
| COMMUNICATION (GUANGDONG) CO., |) | |
| LTD., ONEPLUS TECHNOLOGY |) | |
| (SHENZHEN) CO., LTD., SHENZHEN |) | |
| YUNLING TRADE CO., LTD., and |) | |
| ONEPLUS (BEIJING) MARKETING PLAN |) | |
| CO., LTD. |) | |
| Defendants. |) | |

COMPLAINT

Plaintiff Globalfoundries U.S. Inc. (“Globalfoundries” or “Plaintiff”) brings this patent infringement action against Defendants Taiwan Semiconductor Manufacturing Company Ltd., TSMC North America, TSMC Technology, Inc. (collectively, “TSMC”), Qualcomm Inc., Qualcomm Technologies, Inc. (collectively “Qualcomm”), Guangdong Oujia Holding Co., Ltd., Guangdong Oujia Communication Technology Co., Ltd., OnePlus Mobile Communication (Guangdong) Co., Ltd., OnePlus Technology (Shenzhen) Co., Ltd., Shenzhen Yunling Trade Co., Ltd., and OnePlus (Beijing) Marketing Plan Co., Ltd. (collectively “OnePlus”) (collectively, “Defendants”) as follows:

NATURE OF THE ACTION

1. This is a civil action for infringement of United States Patent No. 9,355,910 (“910 patent” or the “Asserted Patent”) under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

THE PARTIES

2. Plaintiff Globalfoundries U.S. Inc. is a Delaware corporation with its principal place of business at 2600 Great America Way, Santa Clara, California 95054.

3. Defendant Taiwan Semiconductor Manufacturing Company Ltd. is a company organized under the laws of Taiwan with its principal place of business at 8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu 30078, Taiwan.

4. Defendant TSMC North America is a California corporation with its principal place of business at 2851 Junction Avenue, San Jose, California 95134. TSMC North America is a wholly-owned subsidiary of Taiwan Semiconductor Manufacturing Company Ltd.

5. Defendant TSMC Technology, Inc. is a Delaware corporation with its principal place of business at 2851 Junction Avenue, San Jose, California 95134. TSMC Technology, Inc. is a wholly owned subsidiary of Taiwan Semiconductor Manufacturing Company Ltd. TSMC Technology, Inc.’s registered agent, Corporation Service Company, is located at 251 Little Falls Drive, Wilmington, Delaware 19808.

6. Defendants Taiwan Semiconductor Manufacturing Company Ltd., TSMC North America, and TSMC Technology, Inc. are related entities that work in concert to design, manufacture, import, distribute, market, and/or sell the infringing devices.

7. Defendant Qualcomm Inc., is a Delaware corporation with its principal place of business at 5775 Morehouse Drive, San Diego, California 92121.

8. Defendant Qualcomm Technologies, Inc. is a Delaware corporation with its principal place of business at 5775 Morehouse Drive, San Diego, California 92121. Qualcomm Technologies, Inc. is a wholly owned subsidiary of Qualcomm Inc.

9. Defendants Qualcomm Inc. and Qualcomm Technologies, Inc. are related entities that work in concert to design, manufacture, import, distribute, market, and/or sell the infringing devices.

10. Defendant Guangdong Oujia Holding Co., Ltd. is a company organized under the laws of China with its principal place of business at Chenwu Xin'an Industrial Park, Wusha Village, Chang'an Town, Dongguan 523850, China.

11. Defendant Guangdong Oujia Communication Technology Co., Ltd. is a company organized under the laws of China with its principal place of business at Qianhai Complex A201, Qianwan Road 1, Qianhai Shenzhen-Hong Kong Cooperation Zone, Shenzhen, China. Guangdong Oujia Communication Technology, Co., Ltd. is owned by Guangdong Oujia Holding Co., Ltd.

12. Defendant OnePlus Mobile Communication (Guangdong) Co., Ltd. is a company organized under the laws of China with its principal place of business at No. 9B, Zone SE2, 2/F, ChangRong International Hardware & Machinery Plaza, Zhen'an Zhong Road, Wusha Community, Changan Town, Dongguan City, Guangdong Province, China. OnePlus Mobile Communication (Guangdong) Co., Ltd. is owned by Guangdong Oujia Communication Technology Co., Ltd.

13. Defendant OnePlus Technology (Shenzhen) Co., Ltd. is a company organized under the laws of China with its principal place of business at 18F, Block C, Shenye Tairan Building, Tairan Eight Road, Chegongmiao, Futian District, Shenzhen, Guangdong 518048,

China. OnePlus Technology (Shenzhen) Co., Ltd. is owned by OnePlus Mobile Communication (Guangdong) Co., Ltd.

14. Defendant Shenzhen Yunling Trade Co., Ltd. is a company organized under the laws of China with its principal place of business at No. 11 Northwest Zone 1, 2F, Building 3, Huangguan Industrial Plants, Chegongmiao Industrial Zone, Shenzhen, Guangdong, China. Shenzhen Yunling Trade Co., Ltd. is a subsidiary of OnePlus Technology (Shenzhen) Co., Ltd.

15. OnePlus (Beijing) Marketing Plan Co., Ltd. is a company organized under the laws of China with its principal place of business at No. L-BS-48, Building 12, Court 6, Chaoyang Park Road, Chaoyang District, Beijing, China. OnePlus (Beijing) Marketing Plan Co., Ltd. is a subsidiary of OnePlus Technology (Shenzhen) Co., Ltd.

16. Defendants Guangdong Oujia Holding Co., Ltd., Guangdong Oujia Communication Technology Co., Ltd., OnePlus Mobile Communication (Guangdong) Co., Ltd., OnePlus Technology (Shenzhen) Co., Ltd., and OnePlus (Beijing) Marketing Plan Co., Ltd. are related entities that work in concert to design, manufacture, import, distribute, market, and/or sell the infringing devices.

JURISDICTION AND VENUE

17. The Court has subject matter jurisdiction over these claims under 28 U.S.C. §§ 1331 and 1338(a) and the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

18. The Court has personal jurisdiction over each of the TSMC Defendants consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. On information and belief, each TSMC Defendant has regularly and systematically transacted business in Texas, directly or through subsidiaries or intermediaries, and/or committed acts of patent infringement in Texas as alleged more particularly below. Taiwan Semiconductor Manufacturing Company Ltd., TSMC North America, and TSMC Technology,

Inc. have also placed integrated circuits using TSMC's 28 nanometer and smaller technology¹ and products containing these integrated circuits (the "Accused Products") into the stream of commerce by shipping Accused Products into Texas, shipping Accused Products knowing that those products would be shipped into Texas, and/or shipping Accused Products knowing that these Accused Products would be incorporated into other Accused Products that would be shipped into Texas. For example, through TSMC's multi-project wafer ("MPW") services, TSMC provides customized Accused Products to customers for testing, including customers in Texas. On information and belief, TSMC ships test wafers directly to the customers of its CyberShuttle MPW service and/or has knowledge of the final shipping address for customers of both its CyberShuttle MPW service and the MPW service TSMC offers in connection with Metal Oxide Semiconductor Implementation Service ("MOSIS"). The TSMC Defendants interact with customers in Texas, including through visits to customer sites in Texas. Through these interactions and visits, the TSMC Defendants directly infringe the Asserted Patent as set out in more particularity in ¶ 53 of this Complaint. The TSMC Defendants also interact with customers who sell the Accused Products into Texas, knowing that these customers will sell the Accused Products into Texas, either directly or through intermediaries.

¹ TSMC 28 nanometer and smaller technology includes TSMC's 28 nanometer technology (including TSMC's High-k Metal Gate gate-last technology and high-performance compact technology) ("28 Nanometer"), TSMC's 22 nanometer technology (including TSMC's 22 nanometer ultra-low power, 22 nanometer ultra-low leakage, and 22 nanometer ultra-low leakage static random access memory technologies) ("22 Nanometer"), TSMC's 20 nanometer technology ("20 Nanometer"), TSMC's 16/12 nanometer technology (including TSMC's 16 nanometer Fin Field Effect Transistor ("FinFET") process, 16 nanometer FinFET Plus process, 16 nanometer FinFET Compact Technology, and 12 nanometer FinFET Compact Technology) ("16 Nanometer"), TSMC's 10 nanometer technology (including TSMC's 10 nanometer FinFET process) ("10 Nanometer"), TSMC's 7 nanometer technology (including TSMC's 7 nanometer FinFET process) ("7 Nanometer"). Globalfoundries reserves the right to accuse any forthcoming TSMC technology, such as TSMC's 7 nanometer extreme ultraviolet lithography technology and TSMC's 5 nanometer technology.

19. TSMC Technology, Inc. has an office in Austin, Texas that, on information and belief, engages in engineering, research, and development activities relating to the Accused Products. These activities directly infringe the Asserted Patent as set out in more particularity in ¶ 53 of this Complaint. Taiwan Semiconductor Manufacturing Company Ltd. operates TSMC Technology, Inc.'s website and other online activities, including job postings for its Austin office. TSMC North America similarly has an office in Austin, Texas that engages in sales activities related to the Accused Products, including sales visits to customers in and around Austin. These activities directly infringe the Asserted Patent as set out in more particularity in ¶ 53 of this Complaint. Taiwan Semiconductor Manufacturing Company Ltd. operates TSMC North America's website and other online activities, including job postings for its Austin office. Taiwan Semiconductor Manufacturing Company Ltd. also operates an annual Technology Symposium in the United States, including workshops in Austin. Both TSMC Technology, Inc. and TSMC North America are regular attendees and/or exhibitors at these workshops. The TSMC Defendants' activities at these workshops in Austin directly infringe the Asserted Patent as set out in more particularity in ¶ 53 of this Complaint. The Court therefore has both general and specific personal jurisdiction over the TSMC Defendants.

20. The Court has personal jurisdiction over each of the Qualcomm Defendants consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. On information and belief, each Qualcomm Defendant has regularly and systematically transacted business in Texas, directly or through subsidiaries or intermediaries, and/or committed acts of patent infringement in Texas as alleged more particularly below. Qualcomm Inc. and Qualcomm Technologies, Inc. have placed Accused Products into the stream of commerce by shipping Accused Products into Texas, shipping Accused Products knowing that

those products would be shipped into Texas, and/or shipping Accused Products knowing that these Accused Products would be incorporated into other Accused Products that would be shipped into Texas. Qualcomm, encompassing Qualcomm Inc. and Qualcomm Technologies, Inc., operates the Qualcomm website, including job postings for the Austin office.

21. Qualcomm Inc. has an office in Austin, Texas that, on information and belief, engages in engineering, design, testing, research, and development activities relating to the Accused Products. These activities directly infringe the Asserted Patent as set out in more particularity in ¶ 68 of this Complaint.

22. Qualcomm Technologies, Inc. has an office in Austin, Texas that, on information and belief, engages in sales, engineering, research, and development activities relating to the Accused Products. These activities directly infringe the Asserted Patent as set out in more particularity in ¶ 68 of this Complaint. The Court therefore has both general and specific personal jurisdiction over the Qualcomm Defendants.

23. The Court has personal jurisdiction over each of the OnePlus Defendants consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. On information and belief, each OnePlus Defendant has regularly and systematically transacted business in Texas, directly or through affiliates, subsidiaries, or intermediaries, and/or committed acts of patent infringement in Texas as alleged more particularly below. On information and belief, Guangdong Oujia Holding Co., Ltd., Guangdong Oujia Communication Technology Co., Ltd., OnePlus Mobile Communication (Guangdong) Co., Ltd., OnePlus Technology (Shenzhen) Co., Ltd., and Shenzhen Yunling Trade Co., Ltd. and/or their affiliates, subsidiaries, or intermediaries have also placed Accused Products into the stream of commerce by shipping Accused Products into Texas and/or shipping Accused Products knowing

that those products would be shipped into Texas. For example, on information and belief, OnePlus Mobile Communication (Guangdong) Co., Ltd. operates the sales subsidiaries of OnePlus, including operations of sales in Texas. Additionally, on information and belief, Shenzhen Yunling Trade Co., Ltd. operates imports and exports for OnePlus, including imports into the United States for sales and distribution in Texas.

24. OnePlus Technology (Shenzhen) Co., Ltd. has an office in Fort Worth, Texas that, on information and belief, engages in account management for customers in Texas, including customers of the Accused Products. On information and belief, OnePlus Technology (Shenzhen) Co., Ltd. sells directly to customers in Texas and has agreements with distributors such as T-Mobile that sell to consumers in Texas, including in this district. These activities directly infringe the Asserted Patent as set out in more particularity in ¶¶ 71 and 72 of this Complaint.

25. Alternatively, the Court has personal jurisdiction over Guangdong Oujia Holding Co., Ltd. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, Guangdong Oujia Holding Co., Ltd. is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution.

26. Alternatively, the Court has personal jurisdiction over Guangdong Oujia Communication Technology Co., Ltd. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, Guangdong Oujia Holding Co., Ltd. is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution.

27. Alternatively, the Court has personal jurisdiction over OnePlus Mobile Communication (Guangdong) Co., Ltd. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, OnePlus Mobile Communication (Guangdong) Co., Ltd. is not

subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution.

28. Alternatively, the Court has personal jurisdiction over Shenzhen Yunling Trade Co., Ltd. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, Shenzhen Yunling Trade Co., Ltd. is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution.

29. Alternatively, the Court has personal jurisdiction over OnePlus (Beijing) Marketing Plan Co., Ltd. under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, OnePlus (Beijing) Marketing Plan Co., Ltd. is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution. The Court therefore has both general and specific personal jurisdiction over the OnePlus Defendants.

30. With respect to Defendant Taiwan Semiconductor Manufacturing Company Ltd., a Taiwanese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

31. With respect to Defendant TSMC North America, venue is proper in this district under 28 U.S.C. § 1400(b) because Defendant TSMC North America has a regular and established place of business in this district and has committed acts of infringement in this district. Defendant TSMC North America has a permanent office location at Stone Creek II, N. Mopac Expressway, Austin, Texas 78759, which is located in Travis County and within this district. Defendant TSMC North America also employs full-time personnel such as sales personnel and engineers in this district, including in Austin, Texas. Defendant TSMC North America has also committed acts of

infringement in this district by commercializing, marketing, selling, distributing, testing, and servicing certain Accused Products.

32. With respect to Defendant TSMC Technology, Inc., venue is proper in this district under 28 U.S.C. § 1400(b) because Defendant TSMC Technology, Inc. has a regular and established place of business in this district and has committed acts of infringement in this district. Defendant TSMC Technology, Inc. has a permanent office location at 11921 N. Mopac Expressway, Austin, Texas 78759, which is located in Travis County and within this district. Defendant TSMC Technology, Inc. also employs full-time personnel such as engineers in this district, including in Austin, Texas. Defendant TSMC Technology, Inc. has also committed acts of infringement in this district by commercializing, distributing, testing and servicing certain TSMC-branded devices, including but not limited to integrated circuits using TSMC 28 nanometer and smaller technology and products containing these integrated circuits, which are devices Globalfoundries accuses of infringement in this action.

33. With respect to Defendant Qualcomm Inc., venue is proper under 28 U.S.C. § 1400(b) because Defendant Qualcomm Inc. has a regular and established place of business in this district and has committed acts of infringement in this district. Defendant Qualcomm Inc. has a permanent office location at 9600 N. Mopac, Suite 900, Stonebridge Plaza II, Austin, Texas 78759, which is located in Travis County and within this district. Defendant Qualcomm Inc. also employs full-time personnel such as engineers in this district, including in Austin, Texas. Defendant Qualcomm Inc. has also committed acts of infringement in this district by commercializing, marketing, selling, distributing, testing, and servicing certain Accused Products.

34. With respect to Defendant Qualcomm Technologies, Inc. venue is proper under 28 U.S.C. § 1400(b) because Defendant Qualcomm Inc. has a regular and established place of

business in this district and has committed acts of infringement in this district. Defendant Qualcomm Inc. has a permanent office location at 9600 N. Mopac, Suite 900, Stonebridge Plaza II, Austin, Texas 78759, which is located in Travis County and within this district. Defendant Qualcomm Inc. also employs full-time personnel such as engineers in this district, including in Austin, Texas. Defendant Qualcomm Inc. has also committed acts of infringement in this district by commercializing, marketing, selling, distributing, testing, and servicing certain Accused Products.

35. With respect to Defendant Guangdong Oujia Holding Co., Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

36. With respect to Defendant Guangdong Oujia Communication Technology Co., Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

37. With respect to Defendant OnePlus Mobile Communication (Guangdong) Co., Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

38. With respect to Defendant OnePlus Technology (Shenzhen) Co., Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

39. With respect to Defendant Shenzhen Yunling Trade Co., Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

40. With respect to Defendant OnePlus (Beijing) Marketing Plan Co., Ltd., a Chinese company, venue is proper because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

JOINDER

41. Joinder of Defendants is proper under 35 U.S.C. § 299. The allegations of patent infringement contained herein arise out of the same series of transactions or occurrences relating to the importing into the United States and/or making, using, selling, or offering for sale within the United States, the same Accused Products, including, for example, Qualcomm's Snapdragon 855 system on a chip ("SoC") fabricated using, for example, TSMC's 7 Nanometer processes.

42. Common questions of fact relating to Defendants' infringement will arise in this action. For example, common questions of fact concerning TSMC's, Qualcomm's, and OnePlus's infringement of the '910 patent will arise in this action. Additionally, common questions of fact as to the profits and revenues derived by TSMC, Qualcomm, and OnePlus will arise, as well as common questions of fact related to Globalfoundries' damages for the same. On information and belief, common questions of fact will also exist with regard to TSMC's, Qualcomm's, and OnePlus's defenses in this litigation, if any.

FACTUAL BACKGROUND

43. Globalfoundries is a U.S. company with manufacturing facilities that use and develop some of the world's most advanced semiconductor devices available today. Building on IBM's world-class semiconductor technology heritage, Globalfoundries, the acquirer of IBM's semiconductor division, has been accredited as a Category 1A Microelectronics Trusted Source

for fabrication, design, and testing of microelectronics by the U.S. Department of Defense (DOD).² Globalfoundries' East Fishkill, New York facility is currently the most advanced Trusted Foundry, and as such is the only facility of its kind that can provide certain advanced circuits to satisfy the DOD's requirements. As the second-largest foundry in the world and the only advanced Trusted Foundry, Globalfoundries is uniquely equipped to efficiently and quickly meet the DOD's advanced and highly classified manufacturing and production needs—and is also equipped to do the same for its private-sector clients.

44. Globalfoundries is the most advanced pure-play foundry in the U.S. and Europe, and employs thousands of people in the U.S. and worldwide. While other companies were abandoning semiconductor manufacturing in the U.S., Globalfoundries bucked this trend by investing billions of dollars on advanced technology and research in the United States. Globalfoundries originated from another leading U.S. semiconductor company, Advanced Micro Devices' semiconductor manufacturing arm in 2009 and expanded globally through acquisition and organic investment. Its largest expenditure by far is its \$15 billion organic U.S. investment in its leading-edge, 300 acre facility known as Fab 8 in Malta, New York. Globalfoundries broke ground for that state of the art facility in 2009 and produces leading edge technology from that location to customers worldwide. A major U.S. acquisition took place in 2015 when Globalfoundries acquired IBM's microelectronics facilities and personnel in Burlington, Vermont and East Fishkill, New York—facilities that became Fab 9 and Fab 10, respectively. Globalfoundries acquired not just IBM's facilities and personnel, but also the fruits of IBM's decades of industry-leading investment in U.S. semiconductor fabrication capacity and

² "Aerospace and Defense," <https://www.globalfoundries.com/market-solutions/aerospace-and-defense>.

technology. Specifically, Globalfoundries obtained 16,000 IBM patents and applications; numerous world-class technologists; decades of experience and expertise in semiconductor development, device expertise, design, and manufacturing; and an expanded manufacturing footprint. The acquisition cemented Globalfoundries' role as a global leader in world-class semiconductor manufacturing and advanced process technologies.³

45. Globalfoundries' U.S. manufacturing facilities in Burlington, Vermont; East Fishkill, New York; and Malta, New York use and develop some of the most advanced process nodes and differentiated technologies (inclusive of its 12/14nm FinFET, RF and Silicon Photonics technology solutions) available today. Fab 8 is a leading fabrication facility for advanced manufacturing in the U.S., with 40,875 square meters of cleanroom space and continued expansion, and over 3,000 total employees as of June 2019. The current capital investment for the Fab 8 campus stands at more than \$15 billion, making Fab 8 the largest public-private sector industrial investment in New York State's history. The significance of this investment and its importance to advanced manufacturing in the U.S. have been recognized by top government officials, including by the President of the U.S. during a 2012 visit to New York hosted in part by Globalfoundries.⁴

46. Globalfoundries' investment from the Champlain Valley through the Hudson Valley makes it the spine of the Northeast's Tech Valley. Three out of Globalfoundries' five fabs are in the U.S., but investment does not stop at its manufacturing capacity. Globalfoundries'

³ "Globalfoundries Completes Acquisition of IBM Microelectronics Business," <https://www.globalfoundries.com/news-events/press-releases/globalfoundries-completes-acquisition-of-ibm-microelectronics-business>.

⁴ "Globalfoundries Welcomes President Barack Obama to NY's Capital Region," <https://blog.globalfoundries.com/globalfoundries-welcomes-president-barack-obama-to-nys-capital-region/>.

manufacturing footprint is supported by facilities for research, development, sales, and design enablement located near hubs of semiconductor activity, including in Santa Clara, California; Dallas, Texas; Austin, Texas; Rochester, Minnesota; Endicott, New York; and Raleigh, North Carolina. Of its 16,000 employees worldwide, approximately 7,200 are employed in the U.S.

47. The TSMC Defendants, however, have taken a different approach and have decided to simply use Globalfoundries' patented inventions without payment or permission. TSMC is a competing semiconductor foundry with manufacturing facilities located primarily in Hsinchu, Taiwan. TSMC has recently expressed an interest in building a new manufacturing facility in the U.S., but has not reported any tangible steps towards implementing its ostensible interest. In contrast, TSMC completed building the most advanced manufacturing facility of its kind in mainland China last year. By bringing advanced 16nm FinFet to China, TSMC has positioned itself to benefit further from the shift in global supply chains out of the U.S. and Europe into Greater China. TSMC develops, manufactures, imports, and sells for importation into the U.S. semiconductor devices, including to the other Defendants. But TSMC does these things on the back of Globalfoundries, using Globalfoundries' patented technologies to make its products. Indeed, although its infringing chips have flooded the U.S. market, it appears that TSMC has attempted to avoid being subject to patent infringement allegations in the U.S. through creative legal and tax structuring. As set forth below, the Accused Products incorporate, without any license from Globalfoundries, many technologies developed by Globalfoundries and protected by patents owned by Globalfoundries. TSMC's, and/or its customers', importation of infringing articles into the U.S. from Greater China and elsewhere abroad directly harms Globalfoundries and its billions in U.S. investments in manufacturing. Globalfoundries respectfully seeks relief from this Court for Defendants' infringement.

THE ASSERTED PATENT

48. The '910 patent is entitled "Semiconductor device with transistor local interconnects," and issued on May 31, 2016 to inventors Mahbub Rashed, Irene Y. Lin, Steven Soss, Jeff Kim, Chinh Nguyen, Marc Tarabbia, Scott Johnson, Subramani Kengeri, and Suresh Venkatesan. Globalfoundries owns the entire right, title, and interest in and to the '910 patent. A copy of the '910 patent is attached to this Complaint as Exhibit A.

CLAIMS FOR PATENT INFRINGEMENT

49. The allegations provided below are exemplary and without prejudice to Globalfoundries' infringement contentions. In providing these allegations, Globalfoundries does not convey or imply any particular claim constructions or the precise scope of the claims. Globalfoundries' claim construction contentions regarding the meaning and scope of the claim terms will be provided under the Court's scheduling order.

50. As detailed below, each element of at least one claim of the Asserted Patent is literally present in the Accused Products, or is literally practiced by the process through which each of the Accused Products is made. To the extent that any element is not literally present or practiced, each such element is present or practiced under the doctrine of equivalents.

COUNT I INFRINGEMENT OF THE '910 PATENT

51. Globalfoundries incorporates by reference the allegations set forth in paragraphs 1 through 50 as though fully set forth herein.

52. On information and belief, TSMC has infringed and continues to infringe and/or has induced infringement of one or more claims of the '910 patent, including at least claim 1, literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, integrated

circuits manufactured by TSMC using, for example, TSMC's 7 Nanometer technology and products containing these integrated circuits (collectively, the "'910 Accused Products"), in violation of 35 U.S.C. § 271.

53. On information and belief, TSMC has directly infringed and continues to infringe one or more claims of the '910 patent, including at least claim 1, literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering to sell in the United States, without authority or license, '910 Accused Products, in violation of 35 U.S.C. § 271(a). On information and belief, TSMC uses the '910 Accused Products through at least testing, evaluations, and demonstrations. For example, as part of its sales and customer-service activities TSMC performs infringing demonstrations, evaluations, and testing of the '910 Accused Products at customer sites in the United States, at TSMC's sites in the United States, and at TSMC's annual Technology Symposium and related workshops. On information and belief, TSMC imports the '910 Accused Products for the aforementioned uses. On information and belief, TSMC also imports the '910 Accused Products through its CyberShuttle and MOSIS MPW services. For example, TSMC imports the '910 Accused Products for distribution to CyberShuttle customers located in the United States and imports the '910 Accused Products to MOSIS in Marina Del Ray, California. On information and belief, TSMC sells the '910 Accused Products. For example, TSMC sells '910 Accused Products to customers in the United States through its CyberShuttle MPW service. On information and belief, TSMC offers the '910 Accused Products for sale. For example, TSMC engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

54. The '910 Accused Products meet all the limitations of at least claim 1 of the '910 patent. Specifically, claim 1 of the '910 patent claims a semiconductor device comprising: a

semiconductor substrate; a first transistor and a second transistor disposed on said substrate; each of said transistors comprising a source, a drain, and a gate; a first CB layer electrically connected to said gate of said first transistor; a second CB layer electrically connected to said gate of said second transistor; and a CA layer extending longitudinally between a first end and a second end; wherein said first CB layer is electrically connected to said first end of said CA layer; said second CB layer is electrically connected to said second end of said CA layer; said gate of said first transistor extends longitudinally along a first line and said gate of said second transistor extends longitudinally along a second line, wherein said first and second lines are generally parallel to one another and spaced apart from one another; and said CA layer extends generally parallel to said lines and generally perpendicular to said first CB layer and said second CB layer; and wherein said first CB layer extends longitudinally beyond said gate of said first transistor and/or said second CB layer extends longitudinally beyond said gate of said second transistor.

55. The '910 Accused Products are semiconductor devices. Each is an integrated circuit fabricated using, for example, TSMC's 7 Nanometer semiconductor process.

56. The '910 Accused Products have a semiconductor substrate. Each is an integrated circuit fabricated using, for example, TSMC's 7 Nanometer semiconductor process such that the circuit's structures are fabricated on top of a semiconductor substrate.

57. The '910 Accused Products have a first transistor and a second transistor disposed on said substrate. Each is an integrated circuit fabricated using, for example, TSMC's 7 Nanometer semiconductor process such that at least two transistors are formed on the semiconductor substrate.

58. In the '910 Accused Products, each of the said transistors comprise a source, a drain, and a gate. Each is an integrated circuit fabricated using, for example, TSMC's 7 Nanometer

semiconductor process such that at least two transistors are formed on the substrate, where each transistor has a source, a drain, and a gate.

59. The '910 Accused Products have a first CB layer electrically connected to said gate of said first transistor. Each includes, for example, standard cells made up of multiple transistors. The standard cells are fabricated with a local interconnect layer that electrically connects to the gate of a first transistor.

60. The '910 Accused Products have a second CB layer electrically connected to said gate of said second transistor. Each includes, for example, standard cells made up of multiple transistors. The standard cells are fabricated with another local interconnect layer that electrically connects to the gate of a second transistor.

61. The '910 Accused Products have a CA layer extending longitudinally between a first end and a second end; wherein said first CB layer is electrically connected to said first end of said CA layer; said second CB layer is electrically connected to said second end of said CA layer. Each includes, for example, standard cells made up of multiple transistors. The standard cells are fabricated with a layer having a first end and a second end that extends longitudinally such that its ends electrically connect the first and second local interconnect layers.

62. In the '910 Accused Products, the gate of said first transistor extends longitudinally along a first line and said gate of said second transistor extends longitudinally along a second line, wherein said first and second lines are generally parallel to one another and spaced apart from one another. Each includes, for example, standard cells made up of multiple transistors. The standard cells are fabricated such that the first and second transistors include gates that extend longitudinally along lines that are generally parallel to one another and spaced apart.

63. In the '910 Accused Products, the CA layer extends generally parallel to said lines and generally perpendicular to said first CB layer and said second CB layer. Each includes, for example, standard cells made up of multiple transistors. The standard cells are fabricated such that a local interconnect layer is parallel to the lines on which the gates of the first and second transistors lie, and the local interconnect layer is perpendicular to the first and second local interconnect layers described in ¶¶ 59 and 60.

64. In the '910 Accused Products, one or both of the CB layers extends longitudinally beyond the respective gates of the first and second transistors. Each includes, for example, standard cells made up of multiple transistors. The standard cells are fabricated such that the local interconnect layers described in ¶¶ 59 and 60 extend longitudinally beyond the gates of a first and/or second transistor.

65. On information and belief, TSMC actively, knowingly, and intentionally induces infringement of one or more claims of the '910 patent under 35 U.S.C. § 271(b) by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, '910 Accused Products or products containing the infringing semiconductor components of the '910 Accused Products. For example, TSMC representatives travel to customer sites in the United States for sales and support activity that includes working with customers to facilitate these customers' infringing testing, marketing, importation, and sales activity. On information and belief, TSMC supplies customers with '910 Accused Products. Certain TSMC semiconductor components are compatible with standards specific to the United States such as Code Division Multiple Access ("CDMA") wireless standards, required primarily for compatibility with major carriers in the United States. Additionally, the majority of TSMC's net revenue in 2018 was generated from contracts with customers in the United States. TSMC Annual

Report 2018 (I) at 61. On information and belief, TSMC maintains internal projections and analyses of potential markets for specific end-user products, including for certain of the '910 Accused Products. TSMC additionally hosts an Open Innovation Platform Forum in the United States with the goal of facilitating partnerships and collaborations, in addition to an annual symposium and workshops across the United States. *Case Study: Open Innovation Platform*, Taiwan Semiconductor Manufacturing Company Ltd. Website, <https://www.tsmc.com/csr/en/update/innovationAndService/caseStudy/1/index.html> (last visited July 17, 2019); *Events*, Taiwan Semiconductor Manufacturing Company Ltd. Website, <https://www.tsmc.com/english/newsEvents/events.htm> (last visited July 17, 2019). TSMC leverages these events to publicize technological advances and design updates to potential customers and partners in the United States and provide training opportunities to facilitate familiarity with TSMC products, including '910 Accused Products.

66. By at least August 26, 2019, Globalfoundries disclosed, by sending a letter and filing this Complaint and other Complaints involving the Asserted Patent, the existence of the '910 patent and identified at least some of TSMC's and others' activities that infringe the '910 patent. Thus, based on this disclosure, TSMC had knowledge of the '910 patent and that its activities infringe the '910 patent since at least August 26, 2019. Based on Globalfoundries' disclosures, TSMC has also known or should have known since at least August 26, 2019 that its customers, distributors, and other purchasers of the '910 Accused Products are infringing the '910 patent at least because TSMC has known that it is infringing the '910 patent.

67. On information and belief, since the filing of this Complaint, TSMC has continued to use, sell, and/or offer for sale the '910 Accused Products in the United States, and/or import the '910 Accused Products into the United States despite its knowledge of the '910 patent and its

infringement of that patent, and has continued to induce infringement of the '910 patent. TSMC's on-going infringement is willful.

68. Other entities directly infringe the '910 patent by making, using, offering to sell, and/or selling at least some '910 Accused Products in the United States and by importing '910 Accused Products into the United States. For example, TSMC's customer Qualcomm has infringed and continues to infringe one or more claims of the '910 patent, including at least claim 1, literally or under the doctrine of equivalents, at least under 35 U.S.C. § 271(a) by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, semiconductor devices, fabricated using, for example, TSMC's 7 Nanometer process, such as Qualcomm's Snapdragon 855 SoCs (the "Qualcomm '910 Accused Products"). On information and belief, Qualcomm imports the Qualcomm '910 Accused Products into the United States for sales and distribution to customers located in the United States. On information and belief, Qualcomm sells Qualcomm '910 Accused Products in the United States. For example, Qualcomm hires permanent sales personnel located throughout the United States. In particular, Qualcomm has at least sixty-six offices throughout the United States. On information and belief, numerous of these offices engage in sales activities. On information and belief, these sales activities include direct sales by Qualcomm to original equipment manufacturers, including original equipment manufacturers based in the United States. On information and belief, Qualcomm offers the Qualcomm '910 Accused Products for sale in the United States. For example, Qualcomm engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

69. On information and belief, Qualcomm actively, knowingly, and intentionally induces infringement of one or more claims of the '910 patent under 35 U.S.C. § 271(b) by actively

encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, Qualcomm '910 Accused Products or products containing the infringing semiconductor components of the Qualcomm '910 Accused Products. For example, Qualcomm actively promotes the sale, use, and importation of the Qualcomm '910 Accused Products in marketing materials, technical specifications, data sheets, white papers, product briefs, demonstrative videos, web pages on its website (www.qualcomm.com), press releases, development platforms, online forums, and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the Qualcomm '910 Accused Products. On information and belief, Qualcomm supplies customers with Qualcomm '910 Accused Products so that they may be used, sold, or offered for sale by those customers. Qualcomm also seeks and obtains certifications from United States governmental organizations for Qualcomm '910 Accused Products. For example, Qualcomm's Snapdragon 855 has been granted Federal Information Processing Standard ("FIPS") certification by the National Institute of Standards and Technology of the United States of America. As another example, certain Qualcomm '910 Accused Products are compatible with standards specific to the United States such as Code Division Multiple Access ("CDMA") wireless standards, required primarily for compatibility with major carriers in the United States.

70. By at least August 26, 2019, Globalfoundries disclosed, by sending a letter and filing this Complaint, the existence of the '910 patent and identified at least some of Qualcomm's and others' activities that infringe the '910 patent. Thus, based on this disclosure, Qualcomm had knowledge of the '910 patent and that its activities infringe the '910 patent since at least August 26, 2019. Based on Globalfoundries' disclosures, Qualcomm has also known or should have known since at least August 26, 2019 that its customers, distributors, and other purchasers of the

Qualcomm '910 Accused Products are infringing the '910 patent at least because Qualcomm has known that it is infringing the '910 patent.

71. Qualcomm's customers, for example OnePlus and Motorola Mobility LLC, have also infringed and continue to infringe one or more claims of the '910 patent, including at least claim 1, literally or under the doctrine of equivalents at least under 35 U.S.C. § 271(a) by importing into the United States and/or making, using, selling, and/or offering for sale in the United States, without any authority or license, smartphones and devices, for example the OnePlus 7 Pro and the Motorola 5G Moto Mod, that include Qualcomm '910 Accused Products. These products are offered for sale at various retail locations throughout the United States.

72. On information and belief, OnePlus imports at least smartphones, for example the OnePlus 7 Pro, containing Qualcomm '910 Accused Products into the United States for sales and distribution to customers located in the United States. For example, on information and belief, OnePlus imports such smartphones for sale to, for example, carrier partners such as T-Mobile. On information and belief, OnePlus offers such smartphones for sale in the United States. For example, OnePlus engages in sales and marketing activity targeted to the United States on its website (www.oneplus.com).

73. Globalfoundries has suffered and continues to suffer damages as a result of Defendants' infringement of the '910 patent.

74. Defendants' continuing acts of infringement are a basis of consumer demand for the '910 Accused Products. Defendants' continuing acts of infringement are therefore irreparably harming and causing damage to Globalfoundries, for which Globalfoundries has no adequate remedy at law, and will continue to suffer such irreparable injury unless Defendants' continuing acts of infringement are enjoined by the Court. The hardships that an injunction would impose are

less than those faced by Globalfoundries should an injunction not issue. The public interest would be served by issuance of an injunction.

JURY DEMAND

75. Plaintiff demands a jury trial as to all issues that are triable by a jury in this action.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully prays for relief as follows:

- (a) Judgment that each Defendant is liable for infringement and/or inducing the infringement of one or more claims of the Asserted Patent;
- (b) An Order permanently enjoining Defendants and their respective officers, agents, employees, and those acting in privity or in active concert or participation with them, from further infringement of the Asserted Patent;
- (c) Compensatory damages in an amount according to proof, including lost profits, and in any event no less than a reasonable royalty;
- (d) Pre-judgment interest;
- (e) Post-judgment interest;
- (f) Attorneys' fees based on this being an exceptional case pursuant to 35 U.S.C. § 285, including pre-judgment interest on such fees;
- (g) An accounting and/or supplemental damages for all damages occurring after any discovery cutoff and through final judgment;
- (h) Costs and expenses in this action; and
- (i) Any further relief that the Court deems just and proper.

Dated: August 26, 2019

Respectfully submitted,

/s/ Raymond W. Mort, III

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